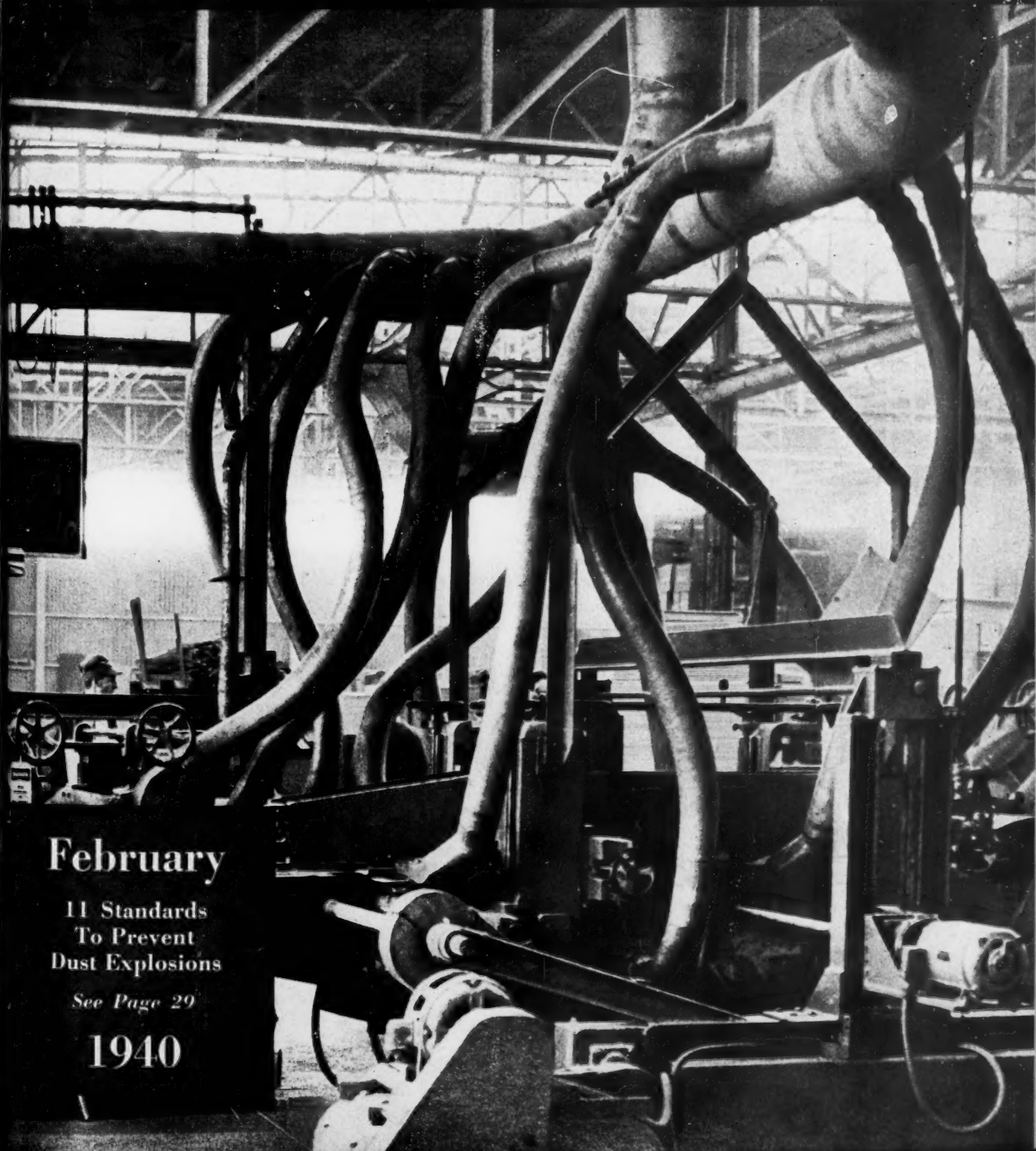


Industrial Standardization

and Commercial Standards Monthly



February

11 Standards
To Prevent
Dust Explosions

See Page 29

1940

Standardization Moves On

STANDARDIZATION can be either a straight-jacket or a springboard to progress. It is constant watchfulness on the part of industry-wide committees and frequent revision that keeps the dust explosion safety codes (page 29) and 400 other American Standards the effective industrial tools that they are.

The U. S. Department of Agriculture and the National Fire Protection Association, joint sponsors for the dust explosion standards, did not stop all research once the first standards were in use. Some one of the 26 standards for gas appliances is always being revised, at the same time that new standards in this field are being developed. Ten such revisions are at present being considered by the Association. An industry-wide committee for the National Electrical Code has been making new materials and processes available through constant revision during nearly a quarter of a century of the code's use. We hardly go to press one month in the year without at least one story of an important revision underway or completed.

Standardization and research move hand in hand. The one consolidates what is already known, while the other stretches experimental fingers out into the untried area of new materials, new methods of doing things, and ultimately new products.

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ASA Member-Bodies

Am. Gas Association
Am. Home Economics Assn.
Am. Institute of Bolt, Nut & Rivet Mfrs.
Am. Institute of Elec. Engineers
Am. Iron & Steel Institute
Am. Petroleum Institute
Am. Soc. of Civil Engineers
Am. Soc. of Mechanical Engineers
Am. Soc. for Testing Materials
Am. Transit Association
Am. Water Works Association
Assn. of American Railroads
Automobile Mfrs. Assn.
Cast Iron Pipe Research Assn.
Copper & Brass Mill Products Assn.
Electric Light and Power Group:
Assn. of Edison Illuminating Companies
Edison Electric Institute
Federal Housing Administration
Federal Works Agency
Fire Protection Group:
Associated Factory Mutual Fire Insurance Companies
Nat. Bd. of Fire Underwriters
Nat. Fire Protection Assn.
Underwriters' Laboratories, Inc.
Institute of Radio Engineers

Mfrs. Standardization Soc. of the Valve and Fittings Industry
Nat. Assn. of Mutual Casualty Companies
Nat. Conservation Bureau
Nat. Electrical Mfrs. Assn.
Nat. Machine Tool Builders' Assn.
Nat. Retail Dry Goods Assn.
Nat. Safety Council
Outdoor Advertising Assn. of America, Inc.
Photographic Manufacturers Group:
Agfa Ansco Corporation
Eastman Kodak Company
Soc. of Automotive Engineers
Telephone Group:
Bell Telephone System
U. S. Department of Agriculture
U. S. Department of Commerce
U. S. Department of the Interior
U. S. Department of Labor
U. S. Govt. Printing Office
U. S. Navy Department
U. S. War Department

Am. Council of Commercial Labs.
Am. Gear Mfrs. Association
Am. Hospital Association
Am. Institute of Architects
Am. Soc. of Heating & Ventilating Engineers
Am. Soc. of Refrigerating Engrs.
Am. Trucking Assns., Inc.
Am. Welding Society
Anti-Friction Bearing Manufacturers Association, Inc.
Assn. of Iron & Steel Engrs.
Associated Gen. Contractors of Am.
Brick Mfrs. Assn. of N. Y.
Grinding Wheel Mfrs. Association
Gypsum Association
Heat Exchange Institute
Illum. Engineering Society
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Metal Lath Mfrs. Association
Modular Service Association
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Soc. of Motion Picture Engineers
Structural Clay Products Institute
U. S. Cap Screw Service Bureau
U. S. Machine Screw Service Bureau
U. S. Wood Screw Service Bureau

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Company Members—Some 2,000 industrial concerns hold membership either directly or by group arrangement through their respective trade associations.

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Combined with Commercial Standards Monthly

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with the cooperation of the National Bureau of Standards

RUTH E. MASON, *Editor*

This Issue

Our Front Cover: Pipes which carry away sawdust produced in cutting insulating board in the Jarratt, Virginia, factory of the Johns-Manville Company.

Photo by Charles Phelps Cushing.

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**Standardization is dynamic, not static. It means
not to stand still, but to move forward together.**

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Canada (foreign \$5.00); Special to schools
and libraries \$2.00 (foreign \$3.00);
single copies 35 cents

February, 1940

Vol. 11, No. 2



*Why dust explosion prevention is needed
These five grain elevators in Chicago were destroyed
May 11, 1939, with a loss of nine lives and property
valued at \$3,500,000*

Research Gives Data For Standards To Prevent Dust Explosions

IN the 20-year period 1919-1938, inclusive, the Chemical Engineering Research Division in the Bureau of Agricultural Chemistry and Engineering of the U. S. Department of Agriculture, has investigated or studied 398 dust explosions to determine the causes and to obtain information which would assist in developing methods of preventing such explosions in industrial plants. In the 398 cases reported to the Bureau, for which accurate records are available, 318 lives were lost, 712 persons were injured and the property loss amounted to \$28,302,685. These losses occurred in a wide variety of industries, including flour and feed mills, grain elevators, starch factories, sugar refineries, woodworking plants, powdered milk plants, soap powder factories, sulphur crushing and pulverizing plants, cork grinding mills, chocolate and cocoa plants, paper mills, aluminum, zinc and magnesium plants, rosin handling

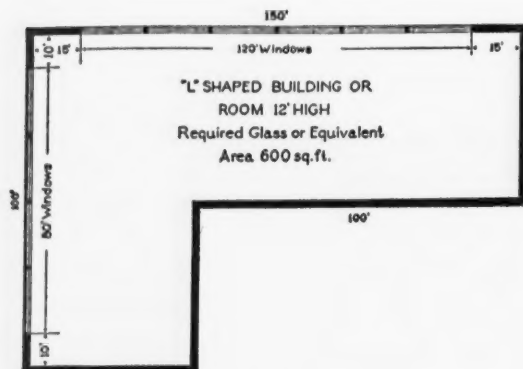
by
David J. Price¹
and
Hylton R. Brown

*Chemical Engineering Research Division,
Bureau of Agricultural Chemistry and
Engineering, U. S. Department of Agriculture*

plants, fertilizer factories, and many others. Under favorable conditions a dust explosion can occur in any industrial plant or establishment where combustible dust is produced.

Research work in the laboratory and at testing stations where actual explosions are produced in order to study their behavior has given considerable information on the quantity of dust necessary to form an explosive mixture with air; the type and temperature of ignition sources required to initiate an explosion; the rate of flame

¹Dr. David J. Price is chairman and Hylton R. Brown is secretary of the National Fire Protection Association Committee on Dust Explosion Hazards, which also operates as an ASA committee under the administrative leadership of the National Fire Prevention Association and the U. S. Department of Agriculture.



To break the force of an explosion a certain percentage of the wall space in a building must be glass, according to the standard requirements. This figure shows the percentage of glass required for the walls of an L-shaped building having an area of 600 sq ft.

The methods of preventing dust explosions given in the standards include recommendations for the construction and arrangement of buildings; methods of controlling and removing dust; safe methods of heating; methods of preventing sparks which might ignite dust; good housekeeping recommendations; and recommendations for safe equipment.

propagation; maximum pressure produced; rate of pressure rise and many other factors relating to the degree of explosibility of the dust.

In 1922 a special committee was organized by the National Fire Protection Association to obtain information on dust explosion prevention, and to make it available to the industries affected. Representatives of the U. S. Department of Agriculture who had been working on this subject were named to take leadership in the work. In 1926 this committee was reorganized to qualify as a sectional committee of the American Standards Association (then the American Engineering Standards Committee), with the National Fire Protection Association and the U. S. Department of Agriculture acting as sponsors. The membership includes representatives of a wide variety of organizations directly concerned with the problem.

The work of this committee has been directed principally towards the preparation of safety codes which make available to plant owners and operators the results of research work on dust explosion prevention and recommendations of the committee for the adoption of safe practices de-

signed to eliminate or reduce the dust explosion hazard.

A new Safety Code for the Prevention of Dust Explosions in the Manufacture of Aluminum Bronze Powder has just been approved as American Standard. Revisions in several of the other codes previously formulated have also been approved, but the aluminum code is of special importance at this time because it represents the first work of the committee dealing with non-carbonaceous dust. Aluminum, a metal, was not considered a combustible material and did not fit in the original definition which explained that any combustible material fine enough and dry enough to form a cloud in air could be ignited and would explode with violence under favorable conditions.

Laboratory tests had shown that aluminum

The new code just approved, to prevent dust explosions in aluminum bronze powder manufacturing plants, is the first safety standard for non-carbonaceous dust, but the eleventh in the series of dust-explosion safety codes. Revisions just approved bring all these standards up-to-date.

Approximately 28,000 industrial plants in the United States are subject to the dust-explosion hazard, says Dr. Price, normally employing 1,325,000 persons and manufacturing products having an annual value of more than ten billions of dollars.

The codes already completed in this series are:

- Safety Code for the Prevention of Dust Explosions in Starch Factories (Z12.2-1940)
- Safety Code for the Prevention of Dust Explosions in Flour and Feed Mills (Z12.3-1940)
- Safety Code for the Prevention of Dust Explosions in Terminal Grain Elevators (Z12.4-1940)
- Safety Code for Pulverizing Systems for Sugar and Cocoa (Z12.6-1940)
- Safety Code for the Prevention of Dust Ignitions in Spice-Grinding Plants (Z12.7-1940)
- Safety Code for the Prevention of Dust Explosions in Wood-Flour Manufacturing Establishments (Z12.8-1940)
- Safety Code for the Installation of Pulverized Fuel Systems (Z12.1-1940)
- Safety Code for the Prevention of Dust Explosions in Coal Pneumatic Cleaning Plants (Z12.7-1940)
- Safety Code for Use of Inert Gas for Fire and Explosion Prevention (Z12.10-1940)
- Safety Code for the Prevention of Dust Explosions in Woodworking Plants (Z12.5-1940)
- Safety Code for the Prevention of Dust Explosions in the Manufacture of Aluminum Bronze Powder (Z12.11-1940)



One reason for the new code

One of the explosions of aluminum dust which indicated the need for the new Safety Code for the Prevention of Dust Explosions in the Manufacture of Aluminum Bronze Powder killed six girls and injured six others in this aluminum products plant. The explosion was attributed to the ignition of the dust by the friction of the wire (shown on the right) rubbing the blades of the dust-collection fan

powder could be ignited and would explode with violence. Actual explosions in aluminum plants, particularly the aluminum-bronze powder producing sections, had proved that a serious hazard to life and property existed in such plants unless protective measures were adopted. With the help and advice of representatives of the aluminum bronze producing industry serving on a subcommittee under the direction of Dr. George S. Rice, formerly chief mining engineer of the Bureau of Mines, a safety code was prepared. After more than two years' consideration by the Dust Explosion Hazards Committee it was presented in May, 1939 to the National Fire Protection Association and adopted by that organization. Since that time it has been presented by letter ballot to the American Standards Association and adopted as American Standard.

This new code follows the general pattern of the other dust explosion prevention codes, but makes specific recommendations concerning the location and construction of buildings, the making and handling of the powder, the location of electrical equipment, the elimination of sources of ignition, and fire fighting methods.

Mention should be made of the fine spirit of cooperation on the part of the representatives of the industry in the preparation of this safety code. These representatives were so anxious to provide the maximum safety possible in order to guard

against the dust explosion hazard, that they wrote into the code recommendations covering the installation of electrical equipment which went beyond the requirements of the existing electrical code. The National Electrical Code has since been amended to include these suggestions. It is this spirit of cooperation on the part of industry which has made possible a marked reduction in our dust explosion losses.

A breakdown of the figures covering the dust explosions in the last 20 years given at the beginning of this article shows a very noticeable reduction during the last 10 years over the previous 10 years. This is roughly the period during which the safety codes have been in effect and the figures offer considerable encouragement to those who have been working earnestly to develop methods of providing protection against the dust explosion hazard in industrial plants. The following table shows the extent of the reduction both in the number of explosions and losses incurred:

	No. of explosions	No. killed	No. injured	Property Loss
1919-1928, inclusive	217	193	362	\$18,249,900
1929-1938, "	181	125	350	10,052,785
Reduction	36	68	12	\$ 8,197,115

It is particularly significant to note the reduction of over \$8,000,000 in property losses in the

last 10 years which is an average reduction of more than \$800,000 annually.

With the addition of the code for aluminum plants the number of safety codes for dust explosion prevention which have been approved as American Standard has been increased to eleven. All of the codes have been revised from time to time in order to keep them current with other codes and recommended safe practices. The complete list is given on page 30.

Other codes, including one for sulphur grinding plants and one for country (rural) grain elevators, are in the course of preparation and the committee has also released a general summary of dust explosion recommendations entitled, "Fundamental Principles for the Prevention of Dust Explosions in Industrial Plants." These Fundamental Principles were prepared for the benefit of the numerous industrial plants which may have a dust explosion hazard in connection with some part of the manufacturing process for which no specific code is available.

The cooperation of all owners, operators, and employees of plants where a dust explosion hazard exists is desired in an effort to reduce still further the losses of life and property. It is hoped that during the next ten years, through closer observation and more general adoption of the recommendations in the safety codes for dust explosion prevention, losses from this industrial hazard can be reduced to a minimum.

The 11 dust explosion standards are now being printed in one volume which will be available soon at 75 cents per copy.

Coonley Elected Chairman Of NAM Board of Directors

Howard Coonley, chairman of the Advisory Committee of the American Standards Association, has been elected chairman of the board of the National Association of Manufacturers. Mr. Coonley is past-president of the NAM.

Representative Committee Develops Safety Codes for Dust Explosion Prevention

One of the principal accomplishments in dust explosion control and prevention in industrial plants is the development of safety codes by the Dust Explosion Hazards Committee of the National Fire Protection Association, which is qualified as a committee of the American Standards Association. The Chemical Engineering Research Division of the Bureau of Agricultural Chemistry and Engineering, U. S. Department of Agriculture, is furnishing the leadership in the technical work. The committee is composed of representatives from the various industries directly concerned, from insurance and safety organizations, state and federal officials, and construction and equipment engineers, as follows:

David J. Price, Bureau of Agricultural Chemistry & Engineering, U. S. Department of Agriculture, *Chairman*.

Hylton R. Brown, Bureau of Agricultural Chemistry & Engineering, U. S. Department of Agriculture, *Secretary*.

National Electrical Manufacturers Association, *L. F. Adams*

Corn Industries Research Foundation, *C. J. Alger*

American Feed Manufacturers Association; Millers

National Federation; Association of Mill and

Elevator Mutual Insurance Companies, *Eugene Arms*

American Boiler Manufacturers Association and Affiliated Industries, *E. G. Bailey*

U.S. Department of Labor, *H. W. Brown*

Association of Government Officials in Industry of the United States and Canada, *W. J. Burk*

Grain Elevator Construction, *G. F. Butt*

National Board of Fire Underwriters, *H. W. Donnan*

Western Factory Insurance Association, *W. J. Fairbairn*

International Association of Industrial Accident Boards & Commissions, *Joseph T. Faust*

U.S. Bureau of Mines, *H. P. Greenwald*

Society of Grain Elevator Superintendents of North America, *James Hayhoe*

Fire Protection and Insurance Section of the Association of American Railroads, *G. R. Hurd*

National Safety Council, *W. Dean Keefer*

American Society of Mechanical Engineers, *J. H. Morrow*

Terminal Grain Elevator Merchants Association, *J. A. Mull*

National Board of Fire Underwriters, *H. E. Newell*

Underwriters' Laboratories, Inc., *A. H. Nuckolls*

Consulting Engineer, Sugar Industry, *Robert Palm*

Western Actuarial Bureau, *K. H. Parker*

Consulting Engineer, *George S. Rice*

Edison Electric Institute, *Edwin B. Ricketts*

National Bureau of Casualty and Surety Underwriters, *F. W. Sehl*

Dust Collection Equipment Manufacture, *Lester C. Smith*

International Association of Fire Chiefs; International Association of Fire Fighters, *Peter Steinkellner*

Associated Factory Mutual Fire Insurance Companies, *N. J. Thompson*

New ASTM Booklet Analyzes Standards for Petroleum Products

THE standard specifications and methods of test for petroleum products prepared under the auspices of the ASA Committee on Petroleum Products are analyzed and problems on which research is required as a basis for new standards are discussed in a series of six papers just published by the American Society for Testing Materials. "Evaluation of Petroleum Products" is the title of the booklet in which the papers appear.

The papers, written by outstanding technologists concerned with the production and use of petroleum products and lubricants, bring up-to-date the information included in the "Report on the Significance of Tests of Petroleum Products" prepared by ASTM Committee D-2 on Petroleum Products and Lubricants, published in 1934. They have been reviewed in detail by the ASA Committee on Petroleum Products (Z11), and have the approval of the committee. The publication as a whole is sponsored by Committee Z11.

The first paper on Gasoline is by T. A. Boyd, head of the fuel department, Research Laboratories Division, General Motors Corporation. It discusses tests for volatility of gasoline, knock characteristics, gum content, and sulfur content. It also refers to two tests for lead content of gasoline and acid-heat test which gives an approximate measure of the amount of unsaturated hydrocarbons present. The discussion of volatility takes up testing methods now in existence, the relationship of volatility to power and miles per gallon, readiness to start, behavior during warm-up, behavior during normal operation, tendency to dilute crankcase oils, and liability to vapor lock.

Two Basic Problems in Diesel Fuels

A paper on Diesel Fuels, by T. B. Rendel, director of the Automotive Research Laboratory, Shell Oil Company, considers two basic problems, first, handling fuel, and second, supplying a fuel which will burn completely in the combustion chamber without objectionable smell or deposits. The handling problems include flash point, pour point, cleanliness, alkali and mineral acidity, and viscosity. Combustion problems include ignition quality, volatility, and sulfur. Tables showing the proposed Diesel fuel oil classification and

proposed test for ignition quality of Diesel fuels are also given.

Another paper covers Fuel Oils other than Diesel, and is by H. V. Humbe, Combustion Engineer of the Atlantic Refining Company. It takes up fuels of the following types which are in general use: distillate, both cracked and straight run; residual, cracked or straight run; and blends of the preceding types. It discusses the significance of test procedures usually found in fuel oil specifications, either general or special, such as flash point; pour point; water and sediment; carbon residue; ash; distillation; viscosity; color; gravity; and neutralization number.

Lubricating Oil Service Discussed

J. C. Geniesse, research chemist of the Atlantic Refining Company, prepared the paper on Lubricating Oils, which discusses the types of service where considerable quantities of lubricants are used; such as, machine bearings, automobile engines, turbines, etc. Viscosity is covered in detail including test methods; industrial machine, motor, and turbine bearings; engine bearings; cylinder walls, rings, valve rods, cam shafts; and gears. The paper also considers low-temperature viscosity; viscosity-pressure relations; viscosity index; oil stability; crankcase oils, turbine oils, gear oils; oil consumption; carbon formation in the combustion chamber; and wear, corrosion, and friction loss.

Information concerning agencies which are conducting research on fuels and lubricating oil is given in the paper on The Status of Research and Lubricating Oils for Spark-Ignition Aircraft Engines, by S. D. Heron, Research Laboratories, Ethyl Gasoline Corporation. Fuel research problems covering behavior of a wide variety of fuels in different types of engines, full-scale-engine instrumentation to determine when safe operating limit of fuel has been reached, single-cylinder knock-test methods, vapor lock, stability against gum formation in storage or in engine induction systems are discussed. Lubricating-oil research problems are described under the following headings: stability as regards piston-ring sticking, stability as regards sludging, wear-reducing property, bearing attack.

Petroleum Lubricating Greases are considered in a paper by Martin B. Chittick, manager of the Specialty and Technical Sales, The Pure Oil Company. Mr. Chittick covers the trend in research in this field and physical and chemical tests applied to control quality and used to predict service performance. Structure, dropping point, stability, extreme pressure lubricants are covered.

The booklet, 64 pages in heavy paper cover, is available from the ASA office at 75 cents. ASA Members are entitled to 20 per cent discount.

W. Dean Keefer Joins Staff Of Illinois Insurance Company

R. L. Forney Represents National Safety Council in ASA Work

W. Dean Keefer, member of the staff of the National Safety Council for 21 years and Director of its Industrial Division for the greater part of that time, has left the Council to become Assistant Manager of the Safety Engineering Department, Lumberman's Mutual Casualty Company of Illinois. Mr. Keefer, one of the best-known safety engineers in the country, has been one of the active leaders of the safety code program of the American Standards Association since he became director of the Industrial Division. He has served as a member of the Safety Code Correlating Committee, the ASA Standards Council, and as an officer of many sectional committees.

R. L. Forney, for many years in charge of the statistical work of the National Safety Council, has been appointed Director of the Industrial Division succeeding Mr. Keefer. Mr. Forney will also serve as a member of the ASA Standards Council, the Safety Code Correlating Committee, and will take over the sectional committee assignments formerly held by Mr. Keefer.

American Standard Safety Codes Included in Museum Exhibit

Modern Man at Work has been selected as the subject for a special exhibit now being shown in the science department of the Newark Museum, Newark, N. J. The exhibition shows protective equipment worn by workers in various fields of industry and occupation. Sections of the exhibit are devoted to equipment worn to protect eyes and ears, legs and feet, arms and hands and torso in various occupations. American Standard safety codes, many of which are being used by the

State of New Jersey as guides for state industrial safety regulations, are included in the exhibit.

The State Department of Labor in New Jersey follows almost exclusively the safety standards approved by the American Standards Association in preparing its safety rules and regulations.

Specifications Approved For Government Purchasing

The Director of Procurement has recently approved for all Government purchasing, the Federal Specifications listed below. The date on which the Specification is effective follows the title.

- Bags; paper, kraft, grocers' Amendment-1
UU-B-36 Jan. 15, 1940
- Batteries, storage; ignition, lighting, and starting
W-B-131b (superseding W-B-131a) Feb. 1, 1940
- Blankets, rubber ZZ-B-426 Feb. 15, 1940
- Brushes, roof; knotted-style, three knots Amend-
ment-1 H-B-471 Jan. 1, 1940
- Brushes; sash-tool H-B-491a (superseding
H-B-491) Jan. 1, 1940
- Cards; index, chemical-wood Amendment-2
UU-C-126 Jan. 15, 1940
- Cards; index, 50% rag Amendment-4 UU-C-111
Jan. 15, 1940
- Cards; index, 100% rag (for) permanent records
Amendment-2 UU-C-116 Jan. 15, 1940
- Carpet; cork LLL-C-96 Feb. 15, 1940
- Cement; masonry Amendment-1 SS-C-181b
Dec. 1, 1939
- Coolers; water, ice-cooled (inverted-bottle type)
RR-C-571a (superseding RR-C-571) Feb. 15, 1940
- Extracts, flavoring; and flavors, nonalcoholic
Amendment-3 EE-E-911 Jan. 15, 1940
- Folders; file (calendered), vertical UU-F-571b
(superseding UU-F-571a) Jan. 1, 1940
- Paint; rubber-base (for), cement-floors TT-P-91
Feb. 15, 1940
- Pans, sauce; corrosion-resisting-steel-clad (3-ply)
RR-P-111 Feb. 15, 1940
- Paper; lens, tissue Amendment-1 UU-P-313
Jan. 15, 1940
- Paper; teletype, roll and tape Amendment-2
UU-P-547a Jan. 15, 1940
- Polish; metal P-P-556a (superseding P-P-556)
Jan. 1, 1940
- Polish; silver P-P-571b (superseding P-P-571a)
Jan. 1, 1940
- Primer, paint; zinc dust-zinc oxide (for galvanized
(zinc-coated) or zinc surfaces) TT-P-641
Jan. 1, 1940
- Red-lead; dry and paste-in-oil Amendment-1
TT-R-191a Jan. 15, 1940
- Sheeting; rubber ZZ-S-311a (superseding
ZZ-S-311) Feb. 15, 1940
- Varnish; Damar TT-V-61 Jan. 1, 1940
- Varnish, rubbing; cabinet TT-V-86 March 1, 1940

These specifications are available from the Superintendent of Documents, Government Printing Office, Washington, D. C., at five cents each.

U. S. National Committee of IEC Elects Crittenden President

THE United States National Committee of the International Electrotechnical Commission has elected E. C. Crittenden, chief of the Electrical Division, National Bureau of Standards, as its new president to succeed Dr. C. H. Sharp, new honorary president. Dr. Sharp has been named by the USNC to succeed Dr. A. E. Kennelly as honorary president. L. F. Adams, assistant to the vice-president, General Electric Company, has been named vice-president, and H. S. Osborne, American Telephone and Telegraph Company, vice-president and treasurer.

All of the new officers have had a long and active affiliation with national and international standardization work. Mr. Crittenden has been a member of the Electrical Standards Committee of the ASA and the USNC since 1931, and in addition to his work on several of the technical committees of the ASA he has represented the National Bureau of Standards on the ASA Standards Council since 1924.

Mr. Adams has also been a member of the Electrical Standards Committee and the United States National Committee of the IEC since 1931, a member of the ASA Standards Council since 1927, and is active on eight of the ASA technical committees.

Mr. Osborne, who was elected at the last annual meeting as the new vice-chairman of the ASA Standards Council, has been a member of the ESC and the USNC since 1931, and is also active in ASA technical committee work.

The Executive Council of the USNC now has the following membership:

C. H. Sharp, Honorary president
E. C. Crittenden, President
L. F. Adams, Vice-president
H. S. Osborne, Vice president and treasurer
P. H. Chase, Electric Light and Power Group
R. E. Hellmund, American Institute of Electrical Engineers
Francis Hodgkinson, American Society of Mechanical Engineers
Frank Thornton, Jr., National Electrical Manufacturers Association
Sidney Withington, member-at-large

The work of the International Electrotechnical Commission will be carried forward as completely as present world conditions permit, said a report from the Central Office of the IEC read at the December 12 meeting of the USNC. The Central Office, which has been moved to London, will continue to send proposals to the national committees



E. C. Crittenden

and ask for comments and action whenever it is possible to do so.

The USNC voted to ask the IEC Central Office to circulate the proposed IEC Specifications for Hydraulic Turbines including Rules for Acceptance Tests to the other national committees as soon as the documents have been prepared. It also voted to advise the IEC that the USNC would like to participate in the work of the IEC Committee on Insulating Materials. Dr. W. H. Gardner, Supervisor of Shellac Research at the Polytechnic Institute of Brooklyn, was named as technical advisor to the USNC on Insulation Materials.

The USNC voted to name the AIEE-EEI-NEMA Joint Committee on Coordination of Insulation as advisory group on a new IEC project on the subject.

Cooperative tests on insulating oil, particularly in connection with a sludge test for transformer oil based on oxidizing the oil under pressure in a bomb, had been arranged between the advisory committee on insulating oils of the USNC and European oil experts, but the war has postponed this cooperative work, it was reported.

Comments have been submitted to the Central

Office of the IEC on proposed safety requirements for electric mains operated radio receiving and amplifying apparatus and also on proposed rules for symbols of electrodes and electric magnitudes of electronic tubes.

Proposed IEC specifications for transformers were tentatively approved by the USNC, with a correction. The committee also voted not to object to the adoption of proposed IEC graphical symbols for weak-current installations, if a note is included calling attention to the fact that an entirely different set of symbols is in use by American industry on American-made products.

Draft Standards Available from Great Britain and New Zealand

Copies of the following draft standards are now available from the American Standards Association:

Great Britain

Grading Rules for Structural and Carcassing Timber
CF (TIB) 3477 (Comments before March 22)

New Zealand

Reinforced Concrete Pressure Pipes for Water Supply
No. D 1318 (Comments before March 18)
Portable Fire Extinguishers of the Foam Type No.
D 1322 (Comments before April 30)

The American Standards Association will forward any comments on these proposed standards to the national standardizing body concerned. The final date on which comments will be considered is given in each case.

Dr. Stanley on Standards Council; Represents Agriculture Department

Dr. Louise Stanley, chief of the Bureau of Home Economics, has been appointed by the U. S. Department of Agriculture as the Department's representative on the ASA Standards Council to succeed Dr. T. H. MacDonald. Dr. MacDonald is head of the Bureau of Public Roads which has been transferred from the Department of Agriculture to the Federal Works Agency, a Member-Body of the American Standards Association. Dr. MacDonald is now representing the Agency on the ASA Standards Council.

Dr. D. J. Price, Bureau of Agricultural Chemistry and Engineering, will continue as representative of the U. S. Department of Agriculture on the Standards Council. Alternate representatives are H. S. Betts, Forest Service; C. W. Kitchen, chief, Agricultural Marketing Service; and F. J. Sette, special technical assistant, Office of the Secretary.

Good Housekeeping Institute Asks Vote on Garment Sizes

Good Housekeeping Institute is asking the readers of *Good Housekeeping Magazine* to vote on whether they prefer to order their children's garments by age or by size, in an article published in the magazine's February issue. The article "Measurement or Age," by Bernice S. Bronner of the Institute staff, describes the measuring project carried out by the WPA under the supervision of the Bureau of Home Economics, and tells how the Bureau's findings were presented to the representative committee which is now working on standards for sizes of children's garments under the procedure of the American Standards Association.

Revision of Recommendation for Files and Rasps Submitted For Approval

The Standing Committee in charge of Simplified Practice Recommendation for Files and Rasps, R6, has approved a revision of the recommendation and it has been submitted to the industry for approval, according to announcement of the Division of Simplified Practice, National Bureau of Standards. The proposed revision would eliminate 128 items, or 25 per cent, from the present list of recognized stock sizes and types, and would add nine to the list.

Before the simplification of files and rasps was first undertaken by the War Industries Board in 1918 the number of varieties was 1,351. The current recommendation was promulgated in 1923, setting a total of 496 items. This present proposed revision would bring the number of stock varieties down to 377.

James Burke

James Burke, member of the United States National Committee of the International Electrotechnical Commission, and past-president of the IEC, died January 21 after a two-week illness of pneumonia. Mr. Burke was a pioneer in the electrical industry, having been an associate of Edison and having worked with him on various developments. He was inventor of the three-wire generator, the universal motor, and the "teaser" system for electrical printing-press control. He was a former president of the National Electrical Manufacturers Association, and a member of the American Institute of Electrical Engineers, the American Society of Mechanical Engineers, and the American Welding Society.

ASA Library Receives New Foreign Standards

The following is a list of new and revised standards which have recently been received by the American Standards Association, and which are available to members for either purchase or loan. When ordering copies please refer to the number as well as the title. The standards are published in the language of the country from which they were received.

Australia

Structural Steel in Building, Code for (CA.1-1939)

Canada

Identification of Piping Systems, Code for (B53-1939)

Holland

Rings for chain slings (N1154)

Chain slings (N1155)

Rules for lightning protection (N1014)

Revised

Symbols for units (N333)

Relations between units (N334)

Italy

Unwelded steel tubes (663 to 667)

Pig iron casting (668 to 670)

Steel casting (671 to 672)

Carbon steel for forging purposes (673 to 674)

Hardening and treating carbon steel (675 to 676)

Electrical wire terminals for automotive use

(677 to 684)

Aircraft: definition of sides and numbering of motor cylinders (685)

Aircraft: direction of rotation of motors and air-screws (686)

Yarns, twisted yarns, and cloth: counts; twists; designation of counts, and twists; tests; microscopical examination of fibre nature (687 to 698)

Threadings of screws for wood. Screws for wood

(699 to 705)

Rolled steel: round bars; round bars for concrete steel; hexagonal, square, flat bars; plates; flat rounded bars (706 to 724)

Rolled steel: T, double T, Z, etc. (725 to 742)

Rolled steel specifications (743 to 745)

Shaft lengths for rivets (746)

Little rivets (747 to 756)

Flat drawn steel bars with tolerance: 10-UT (757 to 759)

New Zealand

Plugs and sockets of the flat pin type for use on 10-amp, 250-volt circuits (198)

Norway

Cotton, striped sateen (NS 606); plain, heavy dress sateen (NS 607); striped, heavy dress sateen (NS 608); striped, light dress sateen (NS 609); unbleached light canvas (NS 620)

Mattresses (NS 681)

Revised

Cotton, kitchen towel (NS 618A)

Norwegian apples and pears, grading and packing

(NS 500B)

Norwegian plums and cherries, grading and packing

(NS 501B)

Paper sizes (BS 20)

Sweden

Incandescent lamps (SEN 23-1938)

Rotating electrical machines (SEN 22-1938)

Graphical symbols for electric traction plants

(SEN 24-1938)

Rules for direction of motion for operating gear

(SEN 25-1938)

Rules for dielectric tests (SEN 26-1939)

Clearance holes for bolts (SMS-179A)

Grinding wheel for tool grinding (SMS-285A)

Deep-dished, flanged end plates for boilers and other closed vessels under pressure (SMS-482)

T-handle tap (SMS-1001A)

Straight stop valves with leather packing, female threads, maximum working pressure I-12, 5 kg per sq cm (SMS-1003)

Straight stop valves with leather packing, male threads, maximum working pressure I-12.5 kg per sq cm (SMS-1004)

Short coupling sleeves for water meters (SMS-1031)

Long coupling sleeves for water meters (SMS-1032)

Coupling nuts for water meters (SMS-1033)

Star-handle tap for wash stands (SMS-1034); vertical spindle (SMS-1035); 45 deg spindle (SMS-1036)

Mixer for kitchen sinks, table connection, rigid outlet pipe (SMS-1037); table connection, movable outlet pipe (SMS-1039); wall connection, movable outlet pipe (SMS-1040)

Bath and shower mixer, with connection to free-lying pipes (SMS-1041); with straight connection to pipes enclosed in the wall (SMS-1043)

Flange nuts (SMS-1049)

Straight stop valves with Jenkins packing, female threads, maximum working pressure I-12.5, II-10 kg per sq cm (SMS-1064)

Angle stop valves with Jenkins packing, female threads, maximum working pressure I-12.5, II-10 kg per sq cm (SMS-1065)

Straight stop valves with conical valve disc, female threads, maximum working pressure I-12.5, II-10 kg per sq cm (SMS-1066)

Angle stop valves with conical valve disc, female threads, maximum working pressure I-12.5, II-10 kg per sq cm (SMS-1067)

Blankets, 100% pure wool (SSK-71); minimum 70% pure wool, maximum 30% shoddy (SSK-72); minimum 30% pure wool, maximum 70% shoddy (SSK-73)

General manufacturing regulations for woollen materials (SSK-80)

Woollen cloth (SSK-81)

Worsted diagonal (SSK-82)

General manufacturing regulations for tricot (SSK-90)

Tricot, hospital vests, cotton (SSK-91); bandage vests (SSK-92); gentlemen's vests (SSK-93); gentlemen's drawers, cotton (SSK-94); ladies' vests, cotton (SSK-95); ladies' bodices, cotton (SSK-96); ladies' knickers (SSK-97); children's vests, linsey-woolsey (SSK-98); children's vests, cotton (SSK-99); children's bodices (SSK-100); children's trousers (SSK-102); boys' drawers (SSK-101); babies' vests (SSK-103)

Rotating electric machines (SEN-22)

Incandescent lamps (SEN-23)

Graphical symbols for electric traction plants (SEN-24)

Rules for direction of motion for operating gear

(SEN-25)

Standard rules for dielectric tests (SEN-26)

Canadian and American Standard Requirements Agree on Safety for Mechanical Refrigeration

Provisions for the safe design, manufacture, and installation of refrigerating systems are in substantial agreement

by

Carl F. Brooks

Secretary, Interpretation and Revision Committee on the American Standard Safety Code for Mechanical Refrigeration¹

"Grateful acknowledgment is expressed to the many authorities, public and industrial, and to the industrial and technical associations and boards for the very extensive and valuable assistance rendered to the committee in its task of preparing this code. Without detracting in the least from the generality of this expression of gratitude it is desired to mention specifically the wealth of information and practical assistance rendered by the Air Conditioning Industries Branch of the Toronto Board of Trade and by the Joint Refrigeration Industries Committee on Codes, sponsored by the American Society of Refrigerating Engineers and governed by the rules and regulations of the American Standards Association, which has been engaged for some considerable time on a similar work and so willingly placed much of their research findings at the committee's disposal. The cooperation and active participation of the Canadian government and provincial authorities in the work has contributed much toward its successful conclusion and, we trust, augurs well for its early and enthusiastic adoption by the provinces, as the Standard Inter-provincial Code for Mechanical Refrigeration."—**From the Preface, Mechanical Refrigeration Code, Canadian Engineering Standards Association.**

IN the long history of the refrigeration industry there was never before a more concerted application of effort to a common problem than in the development of the Canadian Engineering Standards Association Mechanical Refrigeration Code B52-1939 and the American Standard Safety Code for Mechanical Refrigeration B9-1939. The Canadian Code was approved and published by the Canadian Engineering Standards Association in October, 1939, as a CESA Standard and the American Standard Safety Code, sponsored by the American Society of Refrigerating Engineers, was approved by the American Standards Association in April, 1939.

These standards represent the mature judgment, based on many years of experience, of the individuals and groups contributing to the codifying of provisions that meet the safety requirements of present-day refrigerating equipment. Wherever applied, these codes are intended to insure the safe design, manufacture, installation, and operation of all types of refrigerating systems and equipment, and to provide reasonable safeguards to life, health, and property.

First, the record of millions of refrigerating systems of all types in use, in both the United States and Canada, contains nothing that indicates that stringent regulation is needed. This does not mean, however, that safety regulations are not needed. There have been uninformed designers, manufacturers, installers, and operators of refrigerating systems, as well as of other mechanical equipment, indicating that sound and reasonable regulations are essential to the continued safety of such equipment. These codes were prepared to correct certain practices which are inconsistent with safety; and to prescribe standards of safety which will properly influence future progress and development in the art of refrigeration.

Range of Provisions

With the exception of a very few minor differences in the provisions, these being necessary to provide for certain variable conditions in each case, both the Canadian Standard and American

¹The Interpretation and Revision Committee was appointed by ASA committee B9 as a standing subcommittee for the purpose of providing proper interpretation of the Code and of recommending necessary future revisions.

Standard codes are essentially very much in agreement. The range of provisions of the two codes is shown in the Tables of Contents tabulated in the chart shown on this page.

Classification of Refrigerating Systems by Type

In addition to the particular rules that classify the various Building Occupancies in each code, as shown in the tabulation above, Refrigeration Systems are defined in accordance with the basic designs viewed from a safety standpoint as follows: direct systems, unit systems, indirect systems, indirect open spray systems, indirect closed surface systems, indirect vented closed surface systems, double indirect vented open spray systems, indirect absorptive brine systems and double refrigerant systems.

Classification of Refrigerants

Dependent upon their properties and application, commonly used refrigerants are divided into three groups in each code, as shown in the tabulation in the next column. Furthermore, in each code, the kind and quantity of refrigerants are specified for each type of system and building occupancy.

It is firmly believed that the development of these codes is a great step in contributing to good safety practices. It has also demonstrated the ability of the code-formulating groups in the United States and Canada to cooperate both within themselves and together (see box on page

How Refrigerants Are Classified

(a) Group 1

Carbon Dioxide	CO_2
Dichlorodifluoromethane (Freon-12) ..	CCl_2F_2
Dichloromonofluoromethane (Freon-21)	CHCl_2F
Dichlorotetrafluoroethane (Freon-114) .	$\text{C}_2\text{Cl}_2\text{F}_4$
Dichloromethane (Carrene No. 1)	CH_2Cl_2
Trichloromonofluoromethane (Freon-11)	
(Carrene No. 2)	CCl_3F

(b) Group 2

Ammonia	NH_3
Dichloroethylene	$\text{C}_2\text{H}_2\text{Cl}_2$
Ethyl chloride	$\text{C}_2\text{H}_5\text{Cl}$
Methyl chloride	CH_3Cl
Methyl formate	HCOOCH_3
Sulphur dioxide	SO_2

(c) Group 3

Butane	C_4H_{10}
Ethane	C_2H_6
Ethylene	C_2H_4
Isobutane	$(\text{CH}_3)_3\text{CH}$
Propane	C_3H_8

¹Not listed in American Standard Safety Code

38—extract from Preface of CESA Standard B52-1939) to produce a fairly consistent practice, in regard to the design, manufacture, installation, and operation of refrigeration equipment on the North American continent.

Tables of Contents Show Range of Code Provisions

Canadian Engineering Standards Association Mechanical Refrigeration Code CESA B52-1939

Section Number

1. Administrative Regulations
2. Scope and Purpose
3. Definitions
4. Classification of Building Occupancies
5. Classifications of Refrigerating Systems
6. Classification of Refrigerants
7. Institutional Occupancies
8. Public Assembly Occupancies
9. Residential Occupancies
10. Commercial Occupancies
11. Industrial Occupancies
12. Installation Requirements
13. Refrigerant Piping, Valves, Fittings and Related Parts
14. Design, Construction and Safety Devices
15. Tests
16. Special Instructions

American Standard Safety Code for Mechanical Refrigeration (B9-1939)

Section Number

1. Scope and Purpose
2. Definitions
3. Building Occupancy Classification
4. Refrigerating System Classification by Type
5. Refrigerant Classification
6. Institutional Occupancies
7. Public Assembly Occupancies
8. Residential Occupancies
9. Commercial Occupancies
10. Industrial Occupancies
11. Installation Requirements
12. Refrigerant Piping, Valves, Fittings and Related Parts
13. Design, Construction, and Safety Devices
14. Tests
15. Instruction

House Subcommittee Completes Hearing on Boren Bill

HEARINGS on the Boren Bill (H. R. 8652), referred to on page 152 of *INDUSTRIAL STANDARDIZATION* for June, 1939, were concluded by a subcommittee of the House Committee on Interstate and Foreign Commerce on January 26 after four days of testimony.

The Boren Bill provides:

"The Secretary of Commerce, through the National Bureau of Standards, is hereby authorized and directed to establish and publish standards of quality for consumer goods (excepting foods, drugs, cosmetics, and other articles for which Federal standards are now provided by law), when in his judgment such standards are in the public interest. . . .

"When it appears desirable in the interest of the consumer to establish more than one grade for a given product, such grades shall be designated as grade A, grade B, and so forth; grade A representing always the grade of higher quality."

Manufacturers may label goods to show compliance. The label "shall carry a guaranty by the manufacturer that the article meets the requirements of such standard. The wording of the label shall be as prescribed by the Federal Trade Commission."

An appropriation of \$250,000 to the Bureau for the first fiscal year is included in the provisions.

Wide Range of Questions

Questions by the committee members at the hearings dealt mainly with the necessity for and feasibility of the legislation, the cost of carrying out the provisions, the number of tests that would be required, enforcement of the bill, labeling, the effect of grading, and the amount of work already being done by Government agencies in the interests of consumers.

Dr. L. J. Briggs, Director of the National Bureau of Standards, and W. E. Emley, chief of the Organic and Fibrous Materials Division of the Bureau, appeared for the Bureau in support of the bill. Dr. Briggs said that the purpose of the bill was to give the over-the-counter buyer the technical guidance and protection now usually available only to the contract buyer. He said the National Bureau of Standards was well equipped to carry out the aims of the bill because of its experience in developing standards

and in testing commodities for other government agencies. It would be the intention of the Bureau, he explained, not to combine the activity authorized by this bill with the present work on "Commercial Standards" but to set up a new division for work on consumer goods. Replying to questions from members of the subcommittee, he estimated that the cost of the Bureau's part in carrying out the provisions of the bill would not exceed \$1,000,000 per year after the program was well under way. He said that suggestions had been made for amending the bill to bring into the picture other government agencies and also outside organizations interested in consumer standards. He said that such an arrangement would be satisfactory provided nothing was done to interfere with the direct responsibility set up in the bill for its administration. He feared that any dispersion of administrative responsibility might delay progress of the work.

Proposes Public Hearings

Irving C. Fox of the National Retail Dry Goods Association favored the bill and said that the National Bureau of Standards was the proper agency to handle a matter of this kind because of the confidence industry had in the Bureau. Public hearings, he said, should be held on proposed standards.

D. E. Douty, for the American Council of Commercial Laboratories, opposed the bill on the ground that the Bureau was already doing all the things which the bill authorized. Furthermore, the work contemplated by the bill should be and was being done successfully by private industry, he said.

P. S. Millar, president of the Electrical Testing Laboratories, representing the Association of Consulting Chemists and Chemical Engineers, opposed the bill because it substituted government activity for private enterprise. No such legislation was needed, as the American Standards Association was well equipped to do this work and provided a democratic procedure, he said. The commercial laboratories were competent and reliable and ought to be used. Industry could do the work and should be encouraged to do so; the problem being largely one of education, he stated.

Dexter Masters, representing Consumers' Union, supported the bill but did not favor placing its

administration in the Department of Commerce as that department was closest to business and farthest from the consumer. He favored a joint agency headed by the Secretaries of Agriculture, Labor, and Commerce, and possibly the chairman of the Federal Trade Commission.

Miss Nina Collier, for the League of Women Shoppers, welcomed the introduction of legislation to set up consumer standards. The bill was satisfactory in principle, she said, but the Bureau of Standards should not have full control; the responsibility for the drafting of standards should be vested in a group in which all interests are represented.

Mrs. Harriet Howe, for the American Home Economics Association; Dr. Caroline Ware, for the American Association of University Women; and Mrs. Sadie Dunbar (by memorandum) for the General Federation of Women's Clubs, opposed provisions of the bill centering the work in the Department of Commerce on the ground that that Department was set up to advance the interest of "income-getting" as against that of "income-use."

They were wholeheartedly in favor of standards to define consumer goods, however. Such standards were necessary, they said, to enable the consumer to select intelligently those goods and services best adapted to his needs at a price he could afford to pay. They urged that the bill be changed to recognize the methods of the American Standards Association and to give all government agencies now working in the consumer field a voice in determining policies on consumer standards and in promulgating standards. They suggested that a consumer standards board be organized made up of representatives from the government agencies working in this field (especially Agriculture, Commerce, Labor, Treasury, the Federal Trade Commission, and the Tariff Commission) and to include at least three members representing consumer organizations. In summarizing their recommendations they said that they wanted the bill to make use of the existing machinery of the American Standards Association, reinforced by a

governmental set-up and a means of getting standards if the ASA procedure should prove ineffective.

No manufacturing representative testified at the hearings.

Near the end of the hearings, Dr. Briggs said that the entire problem and its connection with the Bureau had been submitted to the Director of the Budget and that budget officials had advised that it was desirable at this time to obtain specific authorization, as the development and promulgation of consumer standards were not mentioned in the organic act of the Bureau.

Proposes Amendment

Dr. Briggs read into the record a proposal that the bill should be amended to include the following paragraph:

"The Secretary of Commerce is further authorized and directed to appoint an advisory committee made up of official representatives of governmental agencies working in the consumer field, including the Departments of Agriculture, Commerce, Labor, and Treasury, and the Federal Trade Commission, and official representatives of three or more responsible consumer organizations. It shall be the duty of the Advisory Committee to make recommendations concerning: (1) the classes of commodities for which standards shall be established; (2) the organization of commodity subcommittees (one for each product) representing responsible producers, distributors, and consumers whose recognized technical knowledge would enable them to report on the scope of standards and direct the development of standards; (3) the minimum number of product characteristics which should be considered in determining the standards; (4) appropriate agency or agencies to cooperate in technical investigation, testing and research; (5) methods of promulgating and insuring the widespread adoption and use of consumer standards of quality, including the designation of agencies to cooperate in this phase of the work."

Permission was granted the National Association of Hosiery Manufacturers, the American Farm Bureau Federation, the American Association of Scientific Workers, and others to place statements in the records.

Representative A. J. Bulwinkle is chairman of the subcommittee in charge of the bill.

Standards Council Rules When To Use Sectional Committees

The use of the sectional committee method has been clarified in a revision to the ASA Procedure as follows:

The sectional committee method shall be used in any case in which a group, having, in the opinion of the Standards Council a substantial interest, so re-

quests in writing. It shall also be used in cases where, in the opinion of the Council, the standard is intended to be used as mandatory rules of regulatory bodies having police powers.

The Standards Council of the ASA approved this interpretation January 25.

Conference on Marking Compressed-Gas Cylinders Asks Manufacturers to Prepare Standards

THE need for standard markings for compressed-gas cylinders to assure correct and easy identification of their contents was discussed at a conference called by the American Standards Association January 10. Representatives of user organizations such as the National Electrical Manufacturers Association, the Telephone Group, the Association of American Railroads, and the American Society of Refrigerating Engineers, met with manufacturer groups, the Compressed Gas Manufacturers Association, the Chlorine Institute, and the International Acetylene Association, and other interested organizations, including the National Conservation Bureau, the National Fire Protection Association, and several Government departments.

NEMA Requests Standards

A request from the National Electrical Manufacturers Association that the American Standards Association organize a project on Standardization of Identification Markings for Compressed Gas Cylinders, and on standardization of fittings, brought about the conference. A survey among NEMA members indicated that there was no standardization of color coding used by various manufacturers to identify the contents of cylinders, the National Electrical Manufacturers Association said in its request for the project. NEMA members were also in favor of standardization of fittings for cylinders so that it would be impossible to connect cylinders containing one gas to a line or manifold intended for another gas. They said that in some cases cylinders containing different gases had different fittings but that lack of standardization among the suppliers made it necessary for the consumer to make up special fittings for use as adapters.

The representatives of the Compressed Gas Manufacturers Association explained that the use of colors painted on the cylinders as a means of identification of the gas which the cylinders contained would be impracticable from several points of view. One was because colors were already being used by manufacturers as a trade mark and

as a means of readily identifying their own cylinders at freight stations and transfer points. They further believed that the use of a color scheme was impracticable because there would not be enough colors which could be used to identify the large number of gases and that the costs of maintaining any complicated system of color stripes would be prohibitive.

The compressed gas manufacturers called attention to the fact that their association, through resolutions adopted in 1925 and reaffirmed in 1927 and 1939, had established a method of identification by which the name of the gas would be stenciled on the cylinder with indelible ink in letters one inch high. The association had been encouraging its members to use this method of identification.

The representatives of NEMA, while expressing the belief that this method had not proved effective because all manufacturers did not use the system and because the stencils in many cases had been defaced through abrasion, agreed that the method should be studied further as a possible solution to the problem.

The conference voted unanimously to request the Compressed Gas Manufacturers Association to consider the possibility of developing a standard based on the methods of marking compressed gas cylinders outlined in the resolutions of their association, and submitting such standards to the American Standards Association.

Conference to Meet Again

No solution to the problems of standardizing fittings could be arrived at during the conference. The compressed gas manufacturers explained that they had been working on the problem for some time and while they had been able to establish certain principles they had not as yet been able to work out any of the details.

The conference voted to meet again about the first of July to receive the report of the Compressed Gas Manufacturers Association on standards for marking cylinders so as to identify their contents.

A. L. Baker Named to Represent ASME on Standards Council

Albert L. Baker, mechanical engineer of design, M. W. Kellogg Company, New York, has been appointed as representative of the American

Society of Mechanical Engineers on the Standards Council of the ASA. Mr. Baker succeeds Walter Somons, whose term expired December 31. C. B. LePage, assistant secretary of the ASME, has been reappointed as an alternate for the one-year period from January 1 to December 31, 1940.

FEBRUARY, 1940

Consumer Standards On the Way

by

P. G. Agnew

Secretary, American
Standards Association

THE American Standards Association has under way a substantial program of standards for ultimate consumer goods—products sold at retail or used by individuals or families in everyday life.

Originally organized as the national clearing house for industrial standards in the field of producer goods, the Association has entered the field of consumer goods in two different ways. First, in quite a number of cases standardization undertaken from the industrial point of view has developed to the point of including work on consumer goods, and in other cases has provided an interesting and instructive background for consumer standards. Second, the Association has directly entered the consumer field through a group of committees organized for the purpose of developing standards for consumer goods.

The program has included work in a number of commodity fields.

The standard for gas ranges well illustrates the nature of these standards. It is in four parts, the first of which lays down requirements for sound, rigid, durable construction necessary for the safe and convenient operation of all types of gas ranges. The second part lays down performance requirements for domestic ranges for use with natural and manufactured gas. It covers gas consumption, leakage, completeness of combustion to prevent contamination of the air by carbon monoxide, operation of safety devices, surface temperature of ovens and boilers in insulated stoves, efficiency of thermostats, non-rusting oven interiors, etc. An elaborate baking test is provided to insure that "the heat distribution in the oven shall be so uniform that cookies distributed in the oven, heated to 375 degrees F, will be evenly browned in not more than 11 minutes." Parts three and four contain similar performance requirements for ranges which burn bottled gases (propane and butane), and carried



Courtesy American Gas Assn.

American Standards Association finds standards for producer goods lead to standards for consumer goods. Gas stoves are among the 26 gas-burning appliances for which the American Standards Association has approved requirements and test methods. The cooking efficiency of a broiler is being tested above.

out under the technical leadership of the American Gas Association, and with the cooperation of the manufacturers, government bureaus, and consumer groups, and it has been an important factor in the radical improvement in gas-burning appliances in the last few years. For example, when the study of gas-fired water heaters was undertaken, it was found that all such heaters then on the market permitted the escape of an amount of carbon monoxide which was dangerous to health. This discovery led to redesigning of all water heaters on the market at that time.

Ninety per cent of the gas appliances made in this country now comply with these standards.

Bedding and upholstery is another field on which a committee is working. It is a comprehensive undertaking, aimed at protecting the public from the use of unsanitary materials; and providing it with a much more complete knowledge of the materials and construction used. A method of labeling is to be included.

Seven subcommittees are now developing drafts on materials used in bedding and upholstery. Reports on cotton and on wool have been completed and reports will follow on innersprings, feathers and downs, miscellaneous materials, sterilization and methods of testing.

The work is being carried out under the tech-

Consumer Standards Projects Now Under Way

Standards for Electrical Refrigerators (B38c2)
Specifications for Domestic Refrigerators Using
Ice (B38.3)

Standards for Bedding and Upholstery (L12)
Sizes of Children's Garments and Patterns (L11)
Specifications for Devices for the Hard of Hearing
(Z24.5)

Standards for Photography (Z38)

Valid Certification (Z34)

Specifications for Gasoline (Z11.40)

Specifications for Household Ladders

Bed Sheets (L4)

Standards for Sun Glasses (CS78-39; CS79-39)
(Through Nat Bur of Stds)

nical leadership of the National Association of Bedding and Upholstery Law Enforcement Officials. These officials are planning to make the standard fully effective by a coordinated system of factory inspection. Their aim is, further, not only to give the consumer better protection, but at the same time to promote uniformity in the bedding requirements of those states that have already enacted legislation and in others where attention is being given to proposed statutes, thus aiding the manufacturers.

Another ASA committee is at work developing American Standard body measurements to be used as the basis of a workable system of sizes for children's garments. The present confusing method of sizing by age is causing consumers great inconvenience, and costing retailers several million dollars a year in the return of clothing that does not fit. The standards will be based on a survey of 36 actual body measurements of 147,000 children between the ages of four and seventeen. This survey has recently been completed by the U. S. Bureau of Home Economics.

All elements of the trade are officially represented on the committee in charge—model makers, pattern makers, garment manufacturers, department stores, chain stores, and mail order houses—the consumer groups and the Federal Government.

A safety code on refrigeration, which has gone through successive editions, provides safeguards for the protection of the public in the use of refrigerators, including such matters as the contamination of the air and of food by the refrigerants used. This code is in wide use by cities in the form of a municipal regulation.

Parallel work was undertaken a number of years ago on methods of test and other standards for household refrigerators from the point of view of economy and convenience in operation. Two such standards have been approved: standard requirements for gas refrigerators as referred

to above, and a standard method for testing refrigerators using ice. After a lapse of some years active work in this field is now being resumed, starting with a revision of the last standard mentioned, and also work on electrical refrigerators, starting with methods of test.

A comprehensive project on photography is actively under way. The program includes: definitions of terms, better interchangeability of films, lenses, filters, exposure meters and other accessories; methods of test for apparatus and chemicals; speed and sensitivity of film and printing paper. It is confidently expected that several of these standards will be completed during the current year, including the fundamental standards on film speed. The ASA has undertaken the direction of an international project on photography in the International Standards Association. The American Standard for 16 mm sound film has been adopted internationally, so that there is now complete interchangeability of this type of film and equipment.

Measuring Sound

An extensive amount of work is being done in setting up standards for various measurements of sound. This is being carried out on a strictly scientific basis. An interesting feature of the undertaking has been that the reference pitch in most extensive use in this country for tuning musical instruments has been given the status of a national standard (treble A=440 vibrations per second) and it has been recommended by a committee of the International Federation of Standardizing Bodies as an international standard. For the convenience of musicians, manufacturers of musical instruments, and others, the National Bureau of Standards is now broadcasting this standard pitch on a practically continuous schedule. The British Broadcasting Company has already changed to this pitch, and it has been tentatively accepted by other European countries. In addition to specifications for a number of scientific instruments, the program includes specifications for audiometers, and methods of testing devices for the hard of hearing—an important undertaking, but one involving a great many technical difficulties.

A code originating with the Underwriters' Laboratories provides protection from fire and accident hazards in the construction and installation of radio receivers. Four other standards having to do with radio receivers are in their final stages. These are: standards for the measurement of characteristics of radio receiving sets; vacuum tube bases; measurements for loud speakers and volume indicators.

A safety code for ladders, amounting to a speci-

fication, has been used for years by many industries. It is the belief of the committee in charge of this code that many of the types of ladders used industrially are also suitable for farm use. These ladders are, however, unnecessarily heavy for use in the household, and work is being started on a specification for household types of ladders.

The American Standard Inspection Requirements for Automobiles, which has just been issued, constitutes a minimum standard for the maintenance of automobiles from the point of view of economy and safety in operation below which no vehicle should be allowed to go. It is thus a minimum standard for the use of owners, operators and service stations. This is being adopted by the motor vehicle commissioners of those states which have mandatory or voluntary inspection of vehicles.

The specification for safety glass for use in automobiles is in extensive use. Nearly all of the state governments which require safety glass have adopted these specifications. Some of the automobile companies have started etching a very small label on each piece of safety glass used in their new cars, indicating that the glass complies with the standard.

A dozen years ago, drivers on Fifth Avenue, New York, stopped their cars on "green," started on "yellow," and recognized "red" as a caution signal. Other cities had other systems. National uniformity in the use of these three colors was brought about through the American Standard color code for traffic signals. It is now used widely in Europe, and bids fair to become a world standard.

The program of which this is a part includes devices for traffic control on streets and highways and for railroad crossing protection.

Specifications for gasoline for use in automobiles, trucks and buses are in draft form.

A group of 50 American Standard Safety Codes for the protection of workmen constitutes the backbone of safety standards used by the state governments, casualty insurance companies, and industrial concerns in this country. Growing out of this, active work has been started on a similar program of codes for the prevention of industrial diseases. One of these latter—toxic limits for carbon monoxide—provides a technical background for protection against such hazards in the home, the automobile, and the garage.

A thorough classification of the different types of coal, from lignite to anthracite, has been successfully completed. It has laid a scientific and engineering basis upon which specifications for different classes and grades of coal can be based. Extensive research was necessary in order to carry out the work, which led to the publication

American Standards In Consumer Goods Field

Method for Testing Domestic Refrigerators Using Ice (B38c1-1931)

Standards for Domestic Gas Ranges (Z21.1-1937)

Standards for Hot Plates and Laundry Stoves (Z21.9-1933)

Standards for Gas Water Heaters (Z21.10-1938)

Standards for Gas Refrigerators (Z21.19-1936) and 22 other American Standards for gas-burning appliances

Safety Code for Mechanical Refrigeration (B9-1939)

Specifications for Dry Cells and Batteries (G18-1937)

Standards for Inspection of Motor Vehicles (D7-1939)

Safety Glass for Motor Vehicles (Z26.1-1938)

Methods of Testing Woven Textile Fabrics (L5-1939) (Through ASTM)

Methods of Test for Shrinkage in Laundering Cotton Cloth (L10-1936) (Through ASTM)

Radio Receiving Sets (C65-1938) (Through Und Labs)

Marking Gold-Filled and Rolled Gold Plate Articles Other than Watchcases (CS47-34) (Through Nat Bur of Stds)

Marking Articles Made of Silver in Combination with Gold (CS51-35) (Through Nat Bur of Stds)

Marking Articles Made of Karat Gold (CS67-38) (Through Nat Bur of Stds)

Standard for Mattresses for Hospitals (CS51-35) (Through Nat Bur of Stds)

Standard for Mattresses for Institutions (CS55-35) (Through Nat Bur of Stds)

of more than 50 research papers. Fifty thousand dollars each was spent on investigations by the U. S. Bureau of Mines and the Canadian Department of Mines.

A number of American Standards originated in other organizations. Among these are methods of testing woven textile fabrics, and methods of testing and shrinkage of cotton cloth, which were developed by the American Society for Testing Materials, and the American Association of Textile Chemists and Colorists. Standards for dry cells, including batteries, signal cells and portable radios; standards for mattresses, and for certain types of gold and silver jewelry, originated with the National Bureau of Standards.

A number of attempts to formulate American Standards for consumer goods have failed, even though they were undertaken by unanimous agreement of all of the groups concerned. For example, plans for a dictionary of terms used in the retail trade have been "stymied" by the failure of a retail group to follow through. Similarly, one on bed blankets, and one providing for the labeling of shrinkage of cotton textiles failed because of a change of heart on the part of the manufacturers. In the latter case, the proposed standard on shrinkage was later embodied in a

mandatory standard by the Federal Trade Commission to prevent unfair trade practices.

The use of specifications in merchandising goods involves the problem of how the customer can be assured that goods comply with the standard. An individual consumer, unlike a corporation, has neither the knowledge nor the facilities to test his purchases. When standards are used in merchandising, manufacturers and retailers state on the labels and in their advertising and other sales representations that the goods comply with the standard. Then comes the question of verifying such statements. To meet this question, many forms of "certifying" compliance by independent laboratories, by other testing agencies and by manufacturers and stores have been used.

Discussion and controversy in regard to such schemes have grown apace, until one often hears, "Who is to certify the certifier?" The American Standards Association is studying this subject actively. A representative committee, appointed to lay down principles that ought to underlie a valid public certification, has been at work for some time, and the Association has adopted the following policy:

1. Any program of certification, labeling, or grade marking, in order to be adequate should be based upon specifications which are publicly available and nationally recognized.
2. It is for the group or groups substantially concerned with the specifications to decide whether there is to be certification or labeling; and the ASA itself cannot directly take any primary responsibility in respect to such activities.
3. Any certification or labeling program should be effectively supervised by a properly qualified body; e.g., a trade association, or a testing laboratory, operating under proper administrative management.

The work of the American Standards Association on consumer goods is carried on by the same methods that have been used in the development of 400 standards in the field of producer goods, in which 3,000 men and women representing 600 national groups are working on various committees.

These ASA methods are based on the fundamental principle that all groups that are affected by a standard have an inherent right to participate in its development. The usual procedure through which American Standards are developed is that of a technical committee on which all of the organized groups concerned with the subject are officially represented. The committees previously mentioned which are in charge of the work on gas appliances and on children's sizes are typical. In most cases, these committees operate under the technical direction and support of one or more of the interested bodies, known as "sponsors."

In addition to these technical committees, the increasing demand for standards on the part of women's groups led the Association to organize a committee on consumer goods, bringing together

for the first time representatives of the great national consumer and retail organizations for a systematic study of standards in retail trade. This committee, known as the Advisory Committee on Ultimate Consumer Goods, now keeps a guiding hand on all ASA standardization projects in the consumer field, and looks out for the consumer point of view in other ASA work. It includes in its membership representatives of national consumers' organizations whose combined membership runs well into the millions—the American Association of University Women, the American Home Economics Association, the General Federation of Women's Clubs, the National League of Women Voters, and the National Home Demonstration Council. Retailers are represented on the committee through the National Retail Dry Goods Association. The Federal Government is participating through five of its bureaus.

It is interesting to note that the work of this ASA committee on consumer goods led to the organization of the National Consumer-Retailer Council, in which organized consumers and retailers are collaborating on improvements in advertising and merchandising methods.

"The National Consumer-Retailer Council and the ASA Advisory Committee on Ultimate Consumer Goods today are the business-financed groups which command the respect and confidence of all the major consumer organizations," says the American Retail Federation in a report entitled *Labeling the Consumer Movement*. "They present an agency for effective voluntary cooperation between consumers and business."

Representatives of the consumer groups themselves have given their approval of the machinery thus set up for the development of standards for consumer goods. They say:

"The American Standards Association is the only standardizing body at present whose machinery is such that the interests of . . . producers, distributors, and consumers are afforded equal consideration from the inception of work on a standard to the final agreement. Before the standard agreed upon by a special committee is accepted as an American Standard, the Standards Council of the ASA must be assured that those who make, sell, and buy the product have been adequately represented and that the standard represents a consensus."

This consumer goods program of the ASA does not touch the style element, nor is it in any sense the purpose of the work to force any product off the market, or to control in any way the lines of products offered for sale. The objective is, in a word, to bring about standards that will make words mean the same to buyer and seller, and which will thus give consumers more intelligent and effective control over their purchases.

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Lens Requirements Inadequate in Safety Code, Says U. S. Navy Department, Asks Revision

The action of the American Standards Association in approving the American Standard Safety Code for the Protection of Heads, Eyes, and Respiratory Organs of Industrial Workers (Z2-1938) "represents a distinct retrogression insofar as the optical qualities of safety lenses are concerned," says the U. S. Navy Department in a letter to the American Standards Association recently asking for a revision of the Code.

Safety goggle lenses cannot be held in fixed orientation with respect to their frames, and the tolerances allowed cause optical errors, either horizontal or vertical divergence, or horizontal

or vertical convergence, the Navy Department explains.

Although the human eye has the ability to compensate or accommodate itself to a variety of conditions, it becomes fatigued more easily in so doing, and fatigue induces accidents, the Department says. "In the interest of safety it is obvious that any matter or item that unnecessarily contributes to fatigue should be removed."

The Navy Department suggests that a revision of the Code "will serve to alleviate, to a great extent, the causes for complaint about industrial safety goggle lenses. . . ."

Draft Standard on Butt Weldings Published for Criticism

Over-all dimensions, tolerances, and marking are included in the new draft standard for butt welding fittings, now being considered by the Sectional Committee on Pipe Flanges and Fittings (B16). The proposed American Standard has been published for comment and criticism in the January, 1940, issue of *Heating, Piping, and Air Conditioning*, with a descriptive article by Sabin Crocker, of the Detroit Edison Company, chairman of Subgroup 6 on Standardizing the Dimensions of Welding Fittings, which prepared the standard.

After the draft has been approved by the sectional committee, it will go to the three sponsor organizations (the Manufacturers Standardization Society of the Valve and Fittings Industry; the Heating, Piping, and Air Conditioning Contractors National Association; and the American Society of Mechanical Engineers) for approval and submittal to the American Standards Association.

Revision Extends Scope of Standard To Cover Anklets and Folded Cuffs

Anklets and folded cuffs will be included in the Commercial Standard for Hosiery Lengths and Sizes, CS46, if a revision now being considered is accepted. The changes were recommended by the National Association of Hosiery Manufacturers with the approval of the Standing Committee which passes upon revisions. The revision has

been submitted to producers, distributors, and users for their acceptance.

A standard for measuring the length of hosiery was originally proposed by the National Association of Hosiery Manufacturers during 1931 and 1932, and became effective as a Commercial Standard in 1933. As a result of further study and research, in 1936 there was added to the standard, methods of measuring the size of the foot, and the combined specifications became Commercial Standard CS46-36. The present revision will add standard lengths for anklets and cuffs, and methods of measuring them.

Mimeographed copies of the recommended revision of the Standard are available from the National Bureau of Standards, Washington, D. C.

ASTM Proposes Revision Of Wire, Cable Standard

ASTM Committee A-5 on Corrosion of Iron and Steel has proposed for publication as tentative a revision of the American Standard Specifications for Zinc-Coated (Galvanized) Iron or Steel Wire Strand (Cable). This standard (ASTM A 122-33) was approved by the ASA in 1935 as G8.6-1935. The revision is in the form of new Tentative Specifications for Zinc-Coated Steel Wire Strand (Galvanized and Extra Galvanized) (ASTM A 122-39 T). It is expected that the proposed tentative standard will be submitted to the American Standards Association when it has been adopted by the American Society for Testing Materials.

Revisions Keep Pipe Standards Up-to-Date With Industry Progress

CONTINUING the practice of keeping the American Standard for Wrought-Iron and Wrought-Steel Pipe (B36.10-1939) abreast of changes in the art of pipe manufacture, the following revised standards were approved by the American Standards Association recently:

American Standard Specifications for
Welded Wrought-Iron Pipe (Revision of
 B36.2-1934) B36.2-1939
Lap-Welded and Seamless Steel Pipe for High-Temperature Service (Revision of B36.3-1936)
 B36.3-1939
Electric-Fusion-Welded Steel Pipe (Sizes 30 In. and Over) (Revision of B36.4-1936) B36.4-1939
Electric-Fusion-Welded Steel Pipe (Sizes 8 In. to but not including 30 In.) (Revision of
 B36.9-1936) B36.9-1939

The standard for wrought-iron pipe has been revised to state more specifically that pipe shall be made from all pig puddled or processed wrought iron.

The specifications for electric-fusion-welded steel pipe both in the larger and smaller sizes (B36.4-1939 and B36.9-1939) were revised to include pipe welded by the straight seam or spiral seam process. Formerly, it was the intention to cover the straight-seam type only, although this was not explicitly stated. An additional revision concerns the specification of test specimen. It is now stated that the specimen for the tensile and bend tests may, at the option of the purchaser, be taken perpendicularly across the weld.

The specifications for lap-welded and seamless steel pipe for high-temperature service received somewhat more extensive revision. The steel

by

Sabin Crocker

*Secretary, ASA Committee on
 Wrought-Iron and Wrought-Steel Pipe (B36)*

process was changed to call for a killed steel in view of the trend in recent years to use a killed product where severe service is involved due to its superior high-temperature characteristics. Other revisions concerned specification of hydrostatic test by formula instead of table as before, change in the flattening test to call for cold flattening of the specimen, inclusion of heat-treatment of the transverse tension test specimen when using a specimen resulting from the flattening test, or hot-flattening a ring section, and slight revisions in notes of Table 1 and weight requirements.

The continuing revision of the pipe standard is intended to keep pace with the industry and facilitate use of the standard in ordering pipe with the view that ultimately all pipe will be ordered in accordance with the schedule series of the American Standard for Pipe.

The work of the ASA Committee on Standardization of Dimensions and Materials of Wrought-Iron and Wrought-Steel Pipe and Tubing (B36) is going forward under the leadership of the American Society of Mechanical Engineers and the American Society for Testing Materials.

Use of Metric Thread to Be Compulsory in Germany

In Germany where Whitworth screw threads have been widely used for parts in sizes above 10 millimeters, a decree aiming at the general introduction of metric threads has been issued by the German Minister of National Economics. After October 1, 1940, bolts, screws, nuts, and in general turned, pressed, or stamped parts of all kinds provided with internal or external threads in sizes up to 10 mm inclusive and intended for use in Germany, shall be made exclusively according to the German standards for metric coarse thread (DIN 13 and 14) or fine thread (DIN 243, and 517 to 521, inclusive). Products of the kinds

mentioned, but having threads in sizes over 10 mm and intended for use in Germany, shall be made, if at all possible, according to DIN 13 and 14 (coarse thread) or DIN 243, and 516 to 517, inclusive (fine thread). Exemptions will be granted, upon application duly supported by valid reasons, for parts made in small numbers for repair purposes. Such exemptions will be granted only as a temporary measure, the time limits depending on the difficulties expected during the transition. In explanation of this strictness it was stated that the unification of screw threads would be severely hampered if for special reasons too large a number of industrial organizations remained exempt from the introduction of metric thread.

Federal Works Agency Becomes ASA Member-Body

THE Federal Works Agency, one of the new organizations set up in the recent reorganization of the Federal Government, became a Member-Body of the American Standards Association during the past month and has now named representatives on the ASA Standards Council. W. E. Reynolds, Public Works Administration, and Thomas H. MacDonald, Public Roads Administration, are the two new Council members, with Earl F. Kelley, and A. C. Shire as their alternates.

The Federal Works Agency is under the direction of John M. Carmody, Administrator. It is essentially a new Department of the Government in the making, and is made up of "administrations" which have essentially the same rank as that of government bureaus. Five of these "administrations" are active in standardization work, and issue standards or good practice recommendations:

Public Roads Administration (formerly the Bureau of Public Roads in the U. S. Department of Agriculture)

U. S. Housing Authority (formerly in the

U. S. Department of the Interior)

Public Works Administration (formerly PWA, independent)

Works Projects Administration (formerly WPA, independent)

Public Buildings Administration (formerly the Public Buildings Branch of the Procurement Division of the Treasury Department, which had been previously the Office of the Supervising Architect of the Treasury Department)

In addition to these five administrations, the Federal Works Agency includes the Federal Fire Council and the Federal Real Estate Board. Several of these administrations are cooperating in the work of the American Standards Association through membership on ASA technical committees. The Public Roads Administration, the Public Works Administration, and the United States Housing Authority, as well as the Office of the Supervising Architect in the Public Buildings Administration have all had a part in committee work for some time.

New York Adopts Standard Traffic-Line Markings

Standard traffic-line markings have been adopted and installed by the New York State Division of Highways during 1939 as a safety measure, to help reduce driving hazards at intersections, on hills, and in other cases where visibility may be poor. Three types of lines are used. The first is a single broken line to show motorists the traffic lanes. The driver is permitted to cross the line only when no approaching car is near.

The second, a single solid line, is not to be crossed except under unusual circumstances, and then only when no approaching car is in sight.

The third is a double line, which is either solid on both sides or solid on one side and broken on the other. If the solid line is on the driver's side, he is forbidden to cross the line. If the broken line is on the driver's side, he is permitted to cross if no approaching car is near. The double solid line is used when it is impossible for the driver to see ahead on the road for any distance. In this case, cars coming from both directions are forbidden to cross the lines.

The lines were adopted after a year of experimentation to obtain an effective pavement marking system.

Standard Garments Proposed By Italian Corporation

Standardized garments for men and women at popular prices were proposed January 11 by the Fascist Clothing Corporation, says a United Press news release from Rome, Italy.

The Corporation proposed the following standardized types of clothing:

Shoes for men and women made of special leather
Men's and women's mixed wool suits and dresses
Non-wool suits and dresses
Mixed cotton cloth for bedsheets and tablecloths
Underwear and men's shirts made from a special synthetic fiber.

The purpose of the standards would be to limit the imports of wool and cotton, increase the use of synthetic fibers, and halt rising clothes prices.

U. S. Bureau of Home Economics Takes Women's Measurements

Findings to be used in studying standard sizes for women's garments

FIFTY-EIGHT measurements taken on women living in different parts of the country are now being taken and will be used as the basis for studying standard sizes for women's clothes, announces the U. S. Bureau of Home Economics, which has initiated and is sponsoring a cooperative WPA project to do the measuring and analyze the results. The measurements are now being taken with the cooperation of the University of Arkansas, University of California, Chicago Board of Education, University of Maryland, New Jersey College for Women, Women's College of the University of North Carolina, and the Pennsylvania State College. WPA projects have been set up in each of these states. Measurements are also being taken in the District of Columbia.

The measurements now being used for sizing women's garments have grown up in the industries without any scientific study of body measurements ever having been made, the Bureau of Home Economics reports. As a result there are no standards for garment or pattern sizes and the consumer is subjected to enormous expense and harassed by difficulties in obtaining properly fitting clothing.

The measurements and the procedures being followed in the Bureau's project were determined after conferences with retail distributors of wo-

men's clothing and with leading pattern and garment manufacturers. Fifty-eight measurements in addition to weight are taken on each woman. The measurements, done with calibrated instruments provided by the United States Bureau of Home Economics, include all those used in constructing garments worn on the trunk of the body but not including hats, shoes, and gloves. They are taken by women on the WPA rolls who have been trained in the procedure by Miss Erna Driftmier, anthropometrist in charge of the measuring, or by her assistant. A Manual of Measurements has been prepared by the Bureau, which is being used in training the measurers so that the results may be accurate and consistent throughout the country. Women are volunteering to be measured through various women's clubs, parent-teacher and church associations, retail stores, and government organizations.

Similar measurements taken on 147,088 children are now being used by a technical committee of the American Standards Association in studying the possibility of setting up standard sizes for children's garments.

Miss Ruth O'Brien, chief of the Division of Textiles and Clothing, U. S. Bureau of Home Economics, is director of the project. Miss Erna Driftmier is anthropometrist in charge of the measuring, with Miss Edwina B. McNaughton as her assistant. The data collected will be analyzed by William C. Shelton, statistician in charge of the analysis, assisted by Albert E. Craig and Marion D. Bingham.

Revision Provides Improved Grades for Hickory Handles

One set of grades for both long and short handles, and a reduction in the number of grades from 11 to 8, have been provided in the current revision of Simplified Practice Recommendation R77, Hickory Handles. The revision has now been given the required degree of acceptance by the industry, and is to become effective October 15, according to an announcement of the Division of Simplified Practice, National Bureau of Standards.

Other changes such as the provision for red as well as white handles in AA and C grades, so that

both are available in each of the major grade classifications—AA, A, B, and C; definitions of admissible blemishes and defects and definite weight ranges for each grade classification have also been included.

Until printed copies are available, mimeographed copies of this Simplified Practice Recommendation may be obtained without charge from the Division of Simplified Practice, National Bureau of Standards, Washington, D. C.

The reduction in the number of grades and more detailed and specific grade descriptions will not only afford a better guide to the purchase of handles but also promote more definite requirements, hence conservation of raw material, it is expected.

ASA Standards Activities

Standards Approved Since Publication of Our January Issue

- Building Exits Code, American Standard (Revision of A9-1939) A9-1940
- Safety Code for the Installation of Pulverized Fuel Systems, American Standard (Revision of Z12.1-1935) Z12.1-1940
- Safety Code for the Prevention of Dust Explosions in Starch Factories, American Standard (Revision of Z12.2-1935) Z12.2-1940
- Safety Code for the Prevention of Dust Explosions in Flour and Feed Mills, American Standard (Revision of Z12.3-1935) Z12.3-1940
- Safety Code for the Prevention of Dust Explosions in Terminal Grain Elevators, American Standard (Revision of Z12.4-1935) Z12.4-1940
- Safety Code for the Prevention of Dust Explosions in Woodworking Plants, American Standard (Revision of Z12.5-1935) Z12.5-1940
- Safety Code for Pulverizing Systems for Sugar and Cocoa, American Standard (Revision of Z12b-1931) Z12.6-1940
- Safety Code for the Prevention of Dust Explosions in Coal Pneumatic Cleaning Plants, American Standard (Revision of Z12f-1930) Z12.7-1940
- Safety Code for the Prevention of Dust Explosions in Wood-Flour Manufacturing Establishments, American Standard (Revision of Z12g-1930) Z12.8-1940
- Safety Code for the Prevention of Dust Ignitions in Spice-Grinding Plants, American Standard (Revision of Z12h-1931) Z12.9-1940
- Safety Code for the Use of Inert Gas for Fire and Explosion Prevention, American Standard (Revision of Z12i-1931) Z12.10-1940
- Safety Code for the Prevention of Dust Explosions in the Manufacture of Aluminum Bronze Powder, American Standard Z12.11-1940

Approved Standards Available Since Publication of Our January Issue

- Specifications for Structural Wood Joist and Plank, Beams and Stringers, and Posts and Timbers, American Standard 07-1939 25¢
- Specifications for Lap-Welded and Seamless Steel Pipe for High-Temperature Service, American Standard B36.3-1939 25¢
- Specifications for Electric-Fusion-Welded Steel Pipe Size 8 In. to but not including 30 In. American Standard B36.9-1939 25¢
- Round Unslotted Head Bolts, American Standard B18.5-1939 50¢
- Involute Splines, Side Bearing, American Standard B5.15-1939 65¢
- Manual for the Compilation of Strength and Thickness of Cast-Iron Pipe, American Recommended Practice A21.1-1939 40¢
- Specifications for Cast-Iron Pipe for Water or Other Liquids, American Standard A21.2-1939 20¢
- Taps, Cut and Ground Threads, American Standard B5.4-1939 \$1.25

Standards Now Being Considered by Standards Council for ASA Approval

- Proposed American Recommended Practice for the Use of Explosives in Anthracite Mines M27
- Commercial Standards for Sun Glass Lenses (CS 78-39; CS 79-39)
- Rubber-Insulated Tree Wire (Revision of C8.16-1936) C8.16
- Backlash for General Purpose Spur Gearing B6.3
- Approval Requirements for Domestic Gas Ranges (Revision of Z21.1-1937)
- Approval Requirements for Gas Clothes Dryers (Revision of Z21.5-1932)
- Conversion Burners in House Heating and Water Heating Appliances, Requirements for Installation of (Revision of Z21.8-1933)
- Approval Requirements for Hot Plates and Laundry Stoves (Revision of Z21.9-1933)
- Approval Requirements for Gas Space Heaters (Revision of Z21.11-1936)
- Approval Requirements for Central Heating Gas Appliances (Revision of Z21.13-1938)
- Approval Requirements for Gas Unit Heaters (Revision of Z21.16-1934)
- Listing Requirements for Gas Conversion Burners (Revision of Z21.17-1934)
- Listing Requirements for Ignition Failure Shut-Off Devices (formerly Automatic Devices Designed to Prevent Escape of Unburned Gas) (Revision of Z21.20-1935)
- Listing Requirements for Water Heater, Gas Range and Space Heater Thermostats (Revision of Z21.23-1935)
- Methods of Testing Molded Materials Used for Electrical Insulation (Revision of C59.1-1938; ASTM D 48-39)
- Specifications for Soft or Annealed Copper Wire (ASTM B3-39) H4.1
- Specifications for Hard-Drawn Copper Wire (Revision of H14-1929; ASTM B1-39) H4.2
- Specifications for Medium-Hard-Drawn Copper Wire (ASTM B2-39) H4.3
- Tinned Soft or Annealed Copper Wire for Electrical Purposes (ASTM B 33-39) H4.4
- Copper Trolley Wire (ASTM B 47-39) H4.6
- Hot-Rolled Copper Rods for Electrical Purposes (ASTM B49-39) H4.7
- Bronze Trolley Wire (ASTM B 9-39) H22.1
- Methods of Testing and Tolerances for Tubular Sleeving and Braids (ASTM D 354-36) L13
- Radio Rules of the National Electrical Safety Code, Part 5
- Electric Fences of the National Electrical Safety Code, Part 6

Project Withdrawn by ASA

- Miscellaneous Pole Line Materials C17

New Project Requested

- Safety Shoes

AMERICAN STANDARDS FOR

Protection Against Dust Explosions

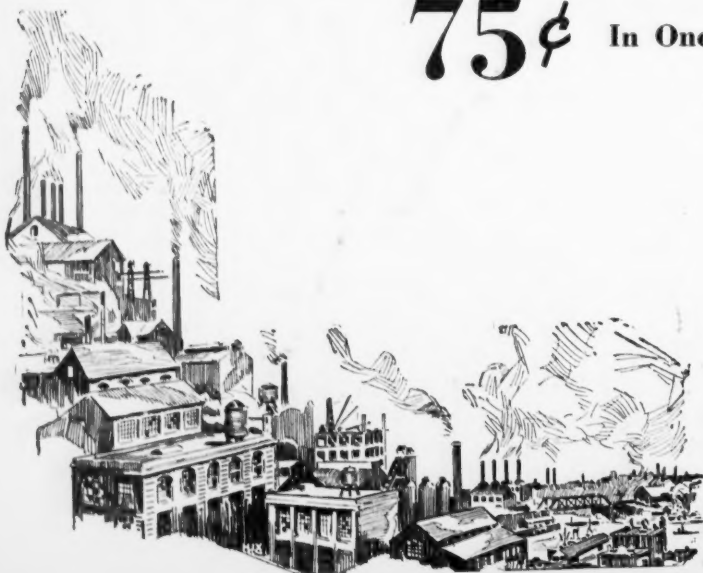
Information on:—

construction and arrangement of buildings
methods of controlling and removing dust
safe methods of heating
methods of preventing sparks
recommendations for general good housekeeping and safe equipment.

- | | | | |
|------------|--|-------------|---|
| Z12.1-1940 | Installation of Pulverized-Fuel Systems, Safety Code for | Z12.7-1940 | Prevention of Dust Explosions in Coal Pneumatic Cleaning Plants, Safety Code for |
| Z12.2-1940 | Prevention of Dust Explosions in Starch Factories, Safety Code for | Z12.8-1940 | Prevention of Dust Explosions in Wood Flour Manufacturing Establishments, Safety Code for |
| Z12.3-1940 | Prevention of Dust Explosions in Flour and Feed Mills, Safety Code for | Z12.9-1940 | Prevention of Dust Ignitions in Spice Grinding Plants, Safety Code for |
| Z12.4-1940 | Prevention of Dust Explosions in Terminal Grain Elevators, Safety Code for | Z12.10-1940 | Use of Inert Gas for Fire and Explosion Prevention, Safety Code for |
| Z12.5-1940 | Prevention of Dust Explosions in Woodworking Plants, Safety Code for | Z12.11-1940 | Prevention of Dust Explosions in the Manufacture of Aluminum Bronze Powder, Safety Code for |
| Z12.6-1940 | Pulverizing Systems for Sugar and Cocoa, Safety Code for | | |

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